Attorney Docket No. 50325-0806
Stamler et al.
Response to Office Action dated May 11, 2007
GAU: 2151 (Walsh)

AMENDMENTS TO THE SPECIFICATION

Please replace the paragraph [0044] with the following amended paragraph.

[0044] According to one feature of this aspect, the identified network element is one of a plurality of network elements in a cluster that is associated with first and second network switches. According to another feature, the steps are performed by a cluster manager that is communicatively coupled to a cluster comprising a plurality of active network elements, the pool of one or more available network elements, a first network switch, and a second network switch. In yet another feature, the step of re-configuring comprises the steps of sending a trigger [[.]] event to the substitute network element that causes the substitute network element to retrieve a configuration over a network connection.

Please replace the paragraph [0068] with the following amended paragraph.

[0068] Further, in response to failure of one cluster element, a new element is automatically brought up, and all other elements in the cluster and its associated switches are automatically re-configured to account for the new element. No other known failover techniques offer automatic re-configuration of associated devices and related devices in this area. In prior approaches, such reconfiguration is a manual process taking hours, whereas an implementation of the approach herein on a server-class processor can provide re-provisioning in from a few seconds to up to a few minutes. For example, experimentation has shown that with the approaches herein, times to failover 4000 ATM connections range from three minutes to eight minutes depending on the broadband configuration of the devices in the cluster. Of this time, it has been found to take less than one second for the cluster manager to detect a problem and fully reconfigure all the equipment; the rest of the time is

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limited by the rate at which the network device operating system can respond to its

reconfiguration and bring up the ATM connections.

Please replace the paragraph [0165] with the following amended paragraph.

[0165] a) End-to-End application connections (e.g., ATM PVC) can be provisioned to

the Cluster. The object corresponding to the end-to-end connection is initially associated to a

stack device object according to the selections made using the radio buttons 506, which is

defined globally per cluster. Subsequently connection objects can be logically re-associated

from a failed device object to a newly allocated device object from the backup pool.

Please replace the paragraph [0166] with the following amended paragraph.

[0166] b) The end-to-end connection CLI targeting the switches is generated by

instantiating templates 1216 and 1220, which can refer to six attributes. The attributes 1204,

1206, 1208, 1210 are administrator defined and they are defined explicitly within the

connection object itself[[:]]. The fifth and sixth attributes are special attributes that are

implicitly defined as the switch-1 interface name attached to the device that is home to the

connection object and the similar interface name for switch-2.

Please replace the paragraph [0185] with the following amended paragraph.

[0185] g) ~~TELENT~~ TELNET OVERRIDE: A direct telnet window embedded in the

main cluster console presentation is available for direct interaction between the administrator

and the individual console of an specific device in the cluster.